

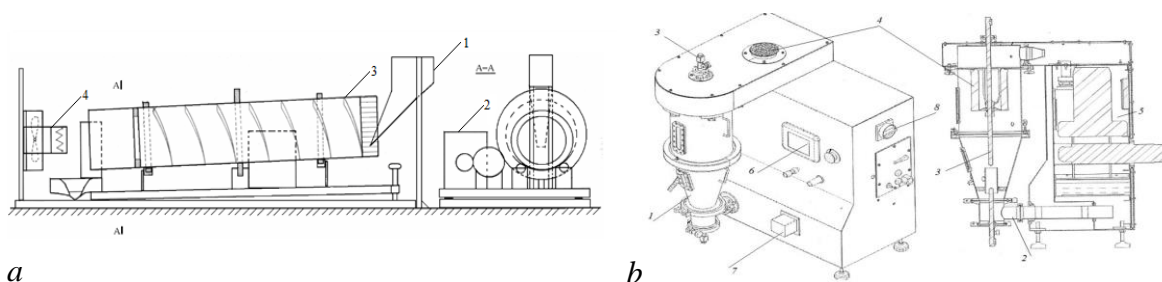
# PHOSPHATE FEED SUPPLEMENTS PRODUCED FROM LITHUANIAN DOLOMITE

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As the human population grows, so does the need of the commercial animal production grows also, and inorganic phosphate supplements play an important role in the animal feed industry. Calcium phosphates, the most widely used phosphate supplements, supply essential minerals for the development. In the animals bones are stored 99 % of total calcium and 80 % of total phosphorus. The skeletal stores of calcium and phosphorus are used to meet dietary inadequacies. Magnesium is a building material for bones and teeth, and is a significant part of various enzymes and plays an important part in metabolism. Along with calcium, magnesium ensures normal functioning of the nervous and muscular systems (muscles contains more magnesium than calcium). Long-term deficiencies of P, Ca and Mg can cause bones to weaken and even break, and muscles can to weaken and atrophy. The optimum ratio of calcium, magnesium and phosphorus in supplements is Ca:Mg = 1:0.5; Ca:P = 1:1.5 [1–4]. Powder phosphates are not suitable for use because they are dusty, hygroscopic and by long store, they lost powdery. Therefore, the aim of this work was to select the proper method of granulation of feed phosphates. The calcium and magnesium phosphates produced of calcined dolomite by decomposition by phosphoric acid were granulated using a drum and a fluid bed granulator (Fig.1).



**Fig. 1.** Granulation equipment: *a* – drum granulator; *b* – fluid bed granulator

Was determined that by using a fluid bed granulator were produced smaller, weaker and more dry granules then by using a drum granulator. The granulometric composition of the product depends on the chosen granulation method and on the moisture content of the initial granulation material. When calcium phosphate were granulating by using drum granulator, the optimum moisture content in the raw material mixture is about 20–26% in order to obtain the highest quantity (about 77–85%) marketable fraction (1–3 mm). The optimum moisture content of raw materials is 15.5 % in order to obtain the highest quantity (about 65–73%) marketable fraction (1–3 mm) in the raw material mixture by using fluid bed granulator. However, both granulators can be use, depending on the parameters of the granular product desired.

## References

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